

ART. V.—*Remarks on the Physical Geography, Climate, &c., of the Regions lying between the Rivers Lachlan and Darling.*  
By W. LOCKHART MORTON, ESQ.

[Read before the Royal Society, 18th August, 1860, on the occasion of the departure of the Victorian Exploring Expedition.]

UNDER the impression that some remarks concerning the country lying between the rivers Lachlan and Darling may be not uninteresting, I have undertaken to place a few before this Society.

It is well known that various individuals have, at different times, made incursions into that extensive tract of country, but none of them, so far as I am aware, have ever placed any of their observations upon record. I believe, therefore, that I may be able to furnish some new and interesting facts.

Towards the end of April last, in company with a brother of the Honorable the Attorney-General, and a Mr. Hamilton, I started from Melbourne for the purpose of looking for good sheep country between the rivers above named. On the 2nd of May we arrived at Euston, a township belonging to New South Wales, and situated on the north bank of the river Murray, about eighty miles above the junction of the river Darling. From this place it was our intention to have proceeded northward, through the Mallee Scrub, but hearing that Mr. W. Ross, one of the most enterprising settlers on the Murray, had another station back fifty miles from the river, and that to it there existed a good road through the scrub, we proceeded up as far as his head station. Going thence northerly, after passing over seven miles of undulating country, abounding with limestone gravel, and much burrowed by wombats—which are evidently much smaller than the common variety—we came to the edge of the Mallee Scrub. On the sandy soil at the edge of the Mallee, we first saw the water-yielding *Hakea*, which was to me quite new. One fine tree seemed so full of water that the outer bark, to the height of a foot from the ground, seemed quite saturated with moisture. This valuable thorny tree is not found except on sandy soil, or on sandhills. It is easily recognized by its peculiarly white silvery foliage. Its roots run along, near to the surface, and after being cut from the root, can be torn

up to the distance of ten or fifteen feet with the greatest ease. The structure of the root of this tree or shrub is tubular, so that water can easily be drawn up through it to the height of several feet.

I had supposed that the country lying back from the Murray would be found nearly on a level with the rest of the Murray country, but on entering the mallee we soon found that we were gradually ascending. The scrub is large and remarkably open; limestone, in the form of coarse gravel, generally crops everywhere through the surface. There is an undergrowth of saltbush, and numerous prickly shrubs, so that even the mallee is capable of being, hereafter, depastured by small flocks of sheep.

We had not proceeded far through the scrub when we came to ridges of loose red sand, covered with bunches of spinefex. These ridges, which resemble those observed by Sturt and Gregory, occur irregularly at intervals of a mile, or of a few hundred yards. They invariably trend in one direction, coincident with the true east and west—not the magnetic. It is worthy of remark, that wherever those ridges of sand occur, it is on the brow of a step to a higher level. This and the extreme purity of the sand, seem to indicate that they owe their origin to water, and not to the influence of the winds.

A few miles into the scrub, Mr. Ross has had a well sunk to the depth of fifty or sixty feet, but the workmen having come upon a bed of sand, with abundance of salt water, they had to stop. The whole of the material dug out of this well consists of an unctuous white clay or marl, containing lime. Mr. Ross has had altogether three wells sunk, the furthest out one being about fifty miles back from the Murray. In all of them water was obtained, but invariably salt; in the furthest out one, however, not so much so as in those nearer the Murray.

Proceeding N.N.E., the mallee becomes even more open, and saltbush and *berce*—a scented wood, like the *myall*—are plentiful. At the distance of about twenty-five miles from the Murray we came to the edge of the open plains.

The line of division between the scrub and the open plains runs nearly north and south; and it would appear that there has been here some subterranean disturbance, causing a depression, extending irregularly along the line of division, for the open country slopes from the north-east, towards the high ground on which the mallee grows; hence it is along

this line of division that water may be more easily found. For a width of ten miles, along the edge of the scrub, the undulating country is very good, abounding with grass, herbs, and many varieties of saltbush. No better fattening country could be found anywhere, especially for sheep.

Our course was now northerly, along the edge of the fine open country. On our right vast plains stretched eastward to the horizon, and on our left was the higher ground of the mallee, into the irregular bends or indentations of which shallow watercourses from the plains frequently enter, and terminate in depressed hollows or gullies.

For eleven miles we were evidently rising higher above the level of the sea. The country has a general slope from the north-east towards the south-west. This remark, I believe, will be found correct in reference to the whole of that extensive region. So far as my own observation goes, this is plainly discernible by the eye; and, I believe, the table of the registrations of the aneroid and of its attached thermometer will prove the opinion as correct.

Farther north, about eleven miles, we come to the Head Winter Station, occupied by Mr. Ross. Having been kindly invited to rest our horses for a few days, we spent the time in examining the locality, and in drying a quantity of meat.

A number of men were here engaged in excavating a very large tank, twelve feet in depth. They told me that they frequently came upon masses of shells, like oyster shells. I could not find any, but I picked up a few curiously shaped pieces of lime, resembling teeth of animals, and pieces of roots of plants. The upright side of the tank, twelve feet high, exhibited a blue clay, in small hard angular pieces, and much mixed with lime-earth and limestone gravel.

Having previously heard from the superintendent of the station, that strata of sandstone rock were to be met with, within a few miles of the station, I felt very anxious to find them, but no one on the station knew anything about the subject; and, although we searched for the locality, we did not succeed in finding it. I, however, saw several specimens. It is not a ferruginous sandstone like the coarse sandstone found on the Murray, but is very hard and compact, and, in its general character and colour, resembles closely the sandstone of the coal formation on the eastern coast of Australia. In such places good water might be found without sinking to any great depth. Even to some distance from where the

sandstone appears, it is probable that the tertiary drift overlying it is not of great depth.

The whole surface of this region is apparently composed of tertiary drift; but there is a marked difference between the open country and that covered with mallee. In the latter limestone greatly abounds, and the ridges of red sand, already mentioned, are always present, and come close up to the edge of the open plains, but never enter them. The plains, on the other hand, possess extensive tracts, having a surface of hard blue clay, and wide areas covered by a thin stratum of red clay. Vast portions of the plains, however, have neither description of clay on their surface; but, it is worthy of remark, that where this is the case, water seems to have carried away the clay stratum from the surface down into the absorbent beds of lime-earth and limestone gravel beneath; for such places are always in hollows, or in great land depressions, and a careful examination of the edges of them proves that this alteration of the surface is a progressive change of a chemical and mechanical character. There is a deep trench, destitute of vegetation, on the one side of which is the clayey surface, on the other, an extremely loose soil, like a level mass of recently slaked lime, and standing higher than the original surface.

Thus the traveller in vain looks for water, even immediately after rain, if he looks for it in the larger depressions of the surface; for it is on the red clay, or on the blue clay tracts only, that it is to be found in very shallow pools. This constitutes the grand question for finding water on that level country of boundless plains—is the surface of red or blue clay? But the red is the most certain, for, being mixed with much red or ferruginous sand, the surface does not crack so much as that of the pure blue clay.

It is highly interesting, I may here observe, to notice the total change in the vegetation of the one surface from the other; the clayey surface abounds with numerous varieties of saltbush, but on the loose absorbent surface, where all the salts have been carried deep into the earth, no saltbush grows; nothing but herbs and a coarse grass, which produces a fine large grain, not unlike French millet; some of this seed I have presented to Dr. Mueller, having found it in the crop of a crested pigeon. The Doctor informs me that it is *Panicum decompositum*, from which the natives make bread.

In reference to the difference between the formation of the plains and the mallee country, one thing, I think, seems evi-

dent, and that is, that on the surface of the plains there is a stratum of comparatively modern drift.

While resting our horses at Mr Ross's, we had also leisure to experiment on the water-yielding *Hakea*. The first root, about half an inch in diameter, and six or eight feet long, yielded, quickly and in large drops, about a wine glassful of really excellent water. Near Mr. Ross's station, and all along the edge of the open country, there is a species of *Casuarina* that I had never met with before. The bark is smooth, the foliage short and erect, the wood is yellow, and so remarkably soft that, with a small tomahawk, I could cut down a tree a foot in diameter in a few seconds. It makes an excellent fire, burning readily when newly cut. I felt much interest in finding there a tree which I had met with near Peak Downs. I am indebted to Dr. Mueller for its botanical name, *Myoporum platycarpum*. The dry wood of this tree, split into laths and tied with bark by the natives, I had found on the river Isaacs, last year. Concluding from this circumstance that it possessed good burning qualities, I put the end of a piece into the fire, when it burned like a candle. Upon finding it near Mr. Ross's, I applied to it the same test with the same result.

On the 10th of May we started from Mr. Ross's, with the intention of proceeding north till we got well back into the centre of the country, and then north-east, so as to get a good view of the whole. There was plenty of water in a shallow creek near this station, from recent rains, but we were doubtful whether any water could be met with farther north. We went about thirty miles north, over a fine country abounding with saltbush, grass, and herbs; we could, however, find no water, and had to camp without it. It was evident that this locality had been visited by herds of cattle and troops of wild horses, and that these had emptied all the shallow water-holes, and gone elsewhere, for none of their tracks were fresh. Thus disappointed, we resolved to cross to the Lachlan, and make an incursion from thence. We therefore returned to the water by Mr. Ross's, and next day started for the nearest point of the Murrumbidgee, steering E. 30° S. For six miles the surface is undulating, and there is a general slope of the land towards the south-west. Beyond this point the fall of the country is towards the south, and shallow water-courses pass through the level plains in the same direction. For ten miles the plains are very level and elevated, then they again become undulating; and, on approaching the Murrumbidgee, there is a

considerable descent from the high plains towards the flats of that river. We were late in getting into camp, and darkness overtook us, but we went on till we saw water. Some of the flats near the river were dangerous to ride over, from the number of deep fissures in the ground, caused by descending currents of water washing away the upper soil. In the morning we found ourselves close by the Murrumbidgee, on an old reed-bed, which was being slowly submerged by the rising and overflowing waters of the river.

We next proceeded up the Murrumbidgee, and thence up the Lachlan for a hundred miles; but it is unnecessary to refer to that part of our journey.

On the 22nd of May we reached the point from which we intended to start for the north-west. We had just got into camp, about noon, when rain began to fall, and it continued till three o'clock p.m. on the 23rd, filling my pint-pot with an inch and a half of water. We now found that the plains were excessively heavy; and as our horses, from their long journey and want of sufficient grass, had become much reduced, we waited a day to allow the surface to dry. On the 25th of May we started in a north-west direction, from a point on the Lachlan about three miles above Dr. Ramsay's station. Passing over seven miles of beautiful plains, well grassed and sound, and apparently on a level with the banks of the river, we came to a dry creek, lined with box and red gum trees; the bottom of this creek is fifteen feet below the level of the plains. From this point we saw a hill-top bearing N. 8° E. In four miles farther, over a fine plain abounding with grass, cottonbush, and some saltbush, we reached a sandhill covered openly with pine trees. Here we camped for the night, our poor horses enjoying plenty of grass. The hill seen on the previous day bore N. 15° E.

Next day we passed over twenty miles of excellent plains, abounding with cottonbush, herbs, grass, and saltbush, as well as much of the grass that yields a seed like millet. The plains possess numerous water-channels, most of them without timber, and but a few feet lower than the level of the plains; all of them have a general south-west course. Sandhills, and ridges of sandy ground, lumps of timber, and patches of hopscrubs afford dry beds and shelter for stock.

Thirty miles from the Lachlan we came to a very large dry creek, from its size and its extensive system of river flats, almost entitled to be called a river bed. It has a general course of W.S.W. For four miles on each side the land slopes

towards it. This has at no remote period been an important creek, and may become such again if its outlet from the Lachlan, now said to be silted up, were again opened. Thus a fine and extensive pastoral country might be supplied with water frontage. It is impossible that this creek can bend round again to the Lachlan; its direction is towards the Darling, and it is probable that it either reaches that river, or ends in some great inland depression. We camped by this creek, and in the morning I saw that there was now quite a range of hill-tops in view towards the north. These bore respectively—N. 14° W., N. 18° E., N. 23° E., N. 37° E., N. 48° E., and the point first observed, N. 65° E. Having always carefully timed our horses, I thus obtained a base by which to measure the distances those hills were from us with some degree of accuracy. One of our six horses had to be left here, unable to go farther. In leaving it we were not without some apprehension that it might be taken off by the wild horses that, in numerous troops, inhabit this otherwise unoccupied country.

Four miles from the large creek we came to a swamp about a mile wide, with an undulating hard clay bottom, covered in some places with a very coarse sand of disintegrated granite. We had now evidently got upon a different description of country; a level country, with merely local depressions, to receive any water that may flow from the plains, and altogether without the shallow water-channels such as we had seen on the south side of the large dry creek already referred to. In crossing this swamp bed, which is thinly covered with the rough-barked box-tree peculiar to a dry country, much polyzonum scrub, and a tall, coarse reed grass, we had some sport with a large emu. Stopping our horses, I dismounted, and making a sound like a young emu, I brought it up within shot, when I discharged both barrels at its head, but without effect. It is of importance to know that emus that have not often seen white men can be thus attracted. When in the north of Queensland, last year, I often, out of curiosity, induced these birds to come quite within shot, and even to follow us for long distances. But it is of no use to fire at them with small shot, as I did on this occasion.

At the distance of two and a half miles farther, we passed another box-swamp, which had a bottom of loose blue clay, cut in the most extraordinary manner with deep and steep-sided fissures, the effect, I believe, of descending currents of water.

In two and a half miles farther we came to another dry swamp, covered with box-trees and polyzoum, when we resolved to camp, as we could see no timber beyond. The nights were always most bitterly cold, with white frosts, the thermometer falling below the freezing point, and we were therefore careful to secure abundance of firewood to burn opposite to the open end of our tents.

At this camp I obtained a fine view of the range of hills before mentioned. The various hills bore respectively—N. 42° E., N. 40° E., N. 57° E., N. 72° E., N. 76° E., N. 80° E., and the almost vertical end of the range first seen, N. 86° E. From the outline of some of these hills, exhibiting an inclined plain and an abrupt cliff alternately, I am of opinion that they are hills of a stratified rock. Vast saltbush plains stretched away on our right and left. Some of the plains are very level, and, having a soil of hard blue clay, grow nothing but a stunted saltbush; but in general there is plenty of cottonbush, herbs, and grass; in short, it is a fine country for fattening sheep.

During our next day's stage, we came again in sight of the *Casuarina* seen at Mr Ross's station; numerous clumps break the monotony of the plains; the soil became more sandy, and grass and herbs more plentiful. Two miles after starting we crossed some rising ground, when we saw before us to the right a long belt of timber stretching south-east and north-west. This was a belt of the *Casuarina*, and towards it the plains seem to slope for at least a mile. In six miles farther we came to an elevated bank, from which we obtained a view to the westward and south-west of far greater extent than usual. The whole surface seemed to slope again to the south-west. The plains were so extensive and so very loose and difficult to travel over, that if we kept our north-west course there was no prospect of our being able to reach any timber. We therefore now went N. 63° W., and crossing an extensive depression of the ground where the surface was as loose as that of newly-ploughed land, in five or six miles we reached a clump of *Casuarina* trees. Here were many old camps of the natives, who had been there but a short time before. Some vertebræ of snakes lying about revealed both the poverty of the locality in game and the abject condition of its temporary inhabitants.

Leaving here our horses and our tents and outfit, we made a journey on foot. The weakness of our horses, and the loose and soft nature of the ground, had prevented us from making long stages, although we frequently relieved them by walking



afoot; and our small stock of provisions began to fail, without being able to find any creature to shoot larger than a common sparrow. We had previously shot so many native turkeys that we had calculated on getting more, but all that we saw after leaving the settled country were too wild. We had now fulfilled the object of our journey, and seeing that all the plains were much alike, we thought it best to push to the south, and thence back to the Lachlan before starvation overtook us. Afraid that the natives might come upon our camp in our absence, we went to the north-west only five miles, obtaining a view extending about five miles beyond. It is all a good sheep country, but so small are the shallow pools that contain water, that without the fall of rain, with which we had been favoured immediately before our visit, we could not possibly have gone where we did.

Returning to our camp at noon, I resolved to spend an hour or two in making a waterhole that might be of use hereafter to myself or to others. Making a spade and crowbar of wood, and having hardened them in the fire, in two hours and a half I dug out of the solid hard ground, a hole capable of containing at least two tons of water, and with the material made a dam across a gully. Having finished my work I stuck up my spade and crowbar with a playful injunction that they should remain there till my return.

We now went S.  $10^{\circ}$  E. for twelve miles over loose plains, and others abounding with saltbush and grass, when we had reluctantly to turn to a course E.  $15^{\circ}$  S., to pick up our horse which had been left. The plains were now more extensive than usual. To the east, west, and the south, there was no tree, no bush, no object to serve as a landmark. On our way we passed several sheets of very shallow water, lying on beds of slippery white clay, and covering several acres. Far to our right, after travelling about five miles, we saw the timber of the large creek already mentioned, and I was thus enabled to mark its course for many miles to the westward of where we had crossed it.

Next day we returned to where we had left our horse and some of our saddles, and other articles, and thence pursued again a southern course, over fine plains, reaching the Lachlan in about sixty miles, and ten miles above Oxley's marked tree, which still stands, though only portions of the letters now remain.

I fear that I have made this paper already too long, notwithstanding that I have excluded much that might have been

amusing and interesting ; but I wish to ask for a little further indulgence that I may make a few general remarks on the peculiarities of the country travelled over, as they may prove of service to others. In many parts of Australia the red gum tree indicates permanent water, and thus a distant line of tall white timber may tell of a creek or river. In dry level regions, within our own territory, there is a box tree with a coarse bark, that indicates the presence of water, not permanent ; but, in the locality lying between the rivers Lachlan and Darling, the same box trees only indicate swamps of the past, and which have beds so riddled with deep fissures, that, if a river were to flow into them to-day, they would be dry to-morrow. The indications of water, in that country, are a tall, coarse-jointed grass, and the largest variety of saltbush. Polyganum scrub always indicates a flooded country ; where there is plenty of this scrub, but stunted and perishing, it seems merely to indicate that the country was once flooded, or better watered. I think the numerous dry watercourses prove this also. The land has either risen, or the bed of the Lachlan has become deeper ; for in my opinion there is great weight of evidence to prove that numerous canals, at no very remote period, went out from the Lachlan to water the lock plains. Hills and ridges of sand, altogether different in color from the ferruginous sand ridges of the mallee scrub, owe their origin, I believe, to currents of fresh water.

We always found our vision much circumscribed by mirage. From four to five miles is the utmost limit at which trees can be seen during the sunshine. The only time to get a clear and distant view on such plains as those referred to, is before sunrise.

In reference to certain animals being able to live without water, wombats, rats, mice, snakes, and dew and knobby-tailed lizards, appear to be continual residents in localities where there is no water near. The first two named may probably migrate, but not the others. Our dog frequently found such creatures, especially small mice.

On the plains the mesembryanthemum plants are always to be met with. It has often occurred to me that this plant might be made use of in cases of emergency. Any quantity of water could be obtained from it, and it would only require a small still for the purpose, unless the soda or potash which it contains could be otherwise extracted.

I think it ought to be generally known, that wherever wells have been sunk, either on the Murrumbidgee or Murray

plains, beds of sand have always been met with, and in the sand brackish water is found.

The following particulars of a well that has been sunk on the Murrumbidgee plains may be not without interest:—The well was sunk to a bed of sand, when water was obtained. It is 49 feet deep, has 7 feet of water in it. The water tastes like lime-water, probably from the potash of the decomposing felspar, for the sand found is a disintegrated granite. On the 9th of June, the temperature of the water was 66°, that of the Murray being 50°. On the 27th of April, at Swan Hill, the temperature was 62°.

It was my earnest wish to have got some fresh horses, and to have returned to follow down the large creek, because I considered it as an object of great interest to do so; but my companions did not feel justified in incurring the necessary expense.

The whole of that country might, in a few years, be occupied by millions of sheep, but a policy, as shortsighted in general as in its details it is unworthy, stands up like some monster of antiquity to repel the tide of settlement. One commissioner, like a king of the wilderness, reigns over forty millions of acres. He is allowed one horse only. Now, as all runs are obtained by tender, and all tenders must wait for the report of the commissioner, and as that gentleman is expected to visit each run tendered for over a country in extent equal to two-thirds of Victoria, with only one horse to ride, it follows that runs applied for by the present generation will be ready for the occupation by the next. Meanwhile, New South Wales is content to defraud itself of additional revenue, Victoria is prevented from extending her commercial limits, a great increase of stock, with its production of wool and human food is hindered, and a vast region of illimitable salt-bush plains slumbers on as a wilderness, where no man dwells.

I have only to add, that I have been indebted to the indefatigable Dr. Mueller for his list of names of plants collected during our journey.

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*List of the Plants collected by Lockhart Morton, Esq., between the Rivers Darling and Lachlan:—*

*Flindersia maculosa*, Ferd. Mueller  
*Dodonæa viscosa*, Linne  
*Heterodendron oleifolium*, Desfontaines

- Sida intricata*, Ferd. Mueller  
*Abutilon halophilum*, Ferd. Mueller  
*Erodium moschatum*, l'Heritier  
*Zygophyllum crenatum*, Ferd. Mueller  
*Acacia stenophylla*, All. Cunningham  
*Cassia platypoda*, R. Brown  
*Cassia heteroloba*, Lindley  
*Euphorbia Chamæsyæ*, Linne  
*Senecia lautus*, Forster  
*Minuria leptophylla*, Candolle  
*Therogeron integerrimus*, Candolle  
*Teucrium racemosum*, R. Brown  
*Solanum pulchellum*, Ferd. Mueller  
*Myoporum platycarpum*, R. Brown  
*Myoporum dulce*, Bentham  
*Hakea stricta*, Ferd. Mueller  
*Salsola Australis*, R. Brown  
*Sclerokæna paradoxa*, R. Brown  
*Sclerochlamys brachyptera*, Ferd. Mueller  
*Kochira scdifolia*, Ferd. Mueller  
*Rhagodia nutans*, R. Brown  
*Exocarpus aphylla*, R. Brown  
*Eragrostis Brownii*, Kunth  
*Panicum decompositum*, R. Brown

OBSERVATIONS OF THE ANEROID AND ATTACHED THERMOMETER  
ON THE LACHLAN AND DARLING PLAINS, &c., &c.

DATE.	PLACE.	ANEROID.	THER.
1860.			
April 21	Poreupine, near Mount Alexander, Victoria...	28·63	26·50
" 21	Hill at head of Bendigo Creek, 5 p.m.....	28·58	25·00
" 21	Sandhurst, 11 p.m. (raining) .....	29·11	22·00
" 23	Serpentine Inn, River Loddon, 6.30 a.m.....	29·09	16·75
" 23	Duck Swamp, Serpentine .....	29·37	18·00
" 24	Loddon Inn, 45 miles N. of Serpentine Inn...	29·87	20·00
" 25	Same place, 6.30 a.m.....	29·93	8·00
" 25	Near Murdering Lake, 2 p.m.....	29·99	27·00
" 26	Lako Boga, water level, 1 p.m.....	30·05	24·50
" 27	Swan Hill, 6.30 a.m. ....	29·95	12·50
" 28	Tyntyndyer, 7 a.m.....	29·81	18·00
" 30	Coghill's Old Station, 16 miles down from } Tyntyndyer, 7 a.m..... }	29·79	23·50

## OBSERVATIONS ON THE ANEROID, &amp;c.—continued.

DATE.	PLACE.	ANEROID.	THER.
1860.			
May	1	Hamilton's Station, 20 miles from last, 7 a.m.	29·88 46·00
"	2	M'Callum's Station, 12 miles below the } junction of the Murrumbidgee .....	30·11 15·00
"	3	Euston, 22 miles below last place .....	30·12 5·00
"	4	Dry Lake, 8 miles E.N.E. from Euston .....	30·15 13·00
"	5	Mr. Ross's Station, Mailman .....	30·15 11·00
"	5	Sand-ridge, in Mallee Scrub, 1.30 p.m.....	30·16 24·00
"	6	Edge of open country, 30 miles N. E. from } Mailman.....	30·20 4·67
"	6	Tacnall, 38 miles N.N.E. from Mailman .....	30·21 18·33
"	7	Head Winter Station (Mr. Ross's).....	30·14 2·50
"	11	Camp, 30 miles N. of last place, or of } latitude 34° 17' 44" .....	29·82 1·75
"	12	10 miles E., 30° S., towards Murrumbidgee, } 1 p.m.....	29·94 28·00
"	13	River Murrumbidgee .....	29·87 2·75
"	15	Above junction of River Lachlan .....	29·82 Zero
"	16	Oxley Reserve .....	29·47 9·75
"	18	21 miles above Oxley .....	29·52 15·50
"	19	Waljeers, 41 miles above Oxley .....	29·56 7·50
"	20	Hurst's Station, 20 miles above Waljeers.....	29·76 5·50
"	21	Anabranh of Lachlan, 16 miles above Hurst's	29·69 2·25
"	22	18 miles above last place, and 14 above Sul- } lar and Bowler's .....	29·46 14·50
"	23	7 miles above last place, and 2½ above } Ramsay's (raining) .....	29·47 15·75
"	26	11 miles N.W. from Lachlan, on sand hill } 50 feet high .....	29·65 9·00
"	27	Large creek, 30 miles N.W. from Lachlan...	29·74 3·50
"	28	Windmill Swamp, 10 miles N.W. from } large creek.....	29·84 { 0·50
"	29	Casuarina clump.....	29·94 { 2·00
"	29	Farthest point reached, about 5 miles from } last .....	30·40 18·00
"	31	Camp 13 miles S. from where the large } creek was first crossed.....	29·84 1·00
June	1	Camp by a dry creek, about 8 miles N. W. } from Anabranh of Lachlan, and sup- } posed to be the same as that crossed 7 } miles N.W. from Ramsay's .....	29·70 { 3·00 below Zero
"	3	Suttor's Station, on Anabranh ..	29·57 2·00
"	5	Oxley's Marked Tree .....	29·50 11·75
"	7	Sand hill, 5 miles E. of Waljeers .....	29·48 6·50
"	8	Hay, on Murrumbidgee.....	29·40 4·50
"	9	Old Man Plain, S. of Murrumbidgee .....	29·50 2·00
"	10	Billibong Creek .....	29·64 { 1·50
"	11	12 miles N. of Deniliquin.....	29·54 { 7·00
"	11	Deniliquin (sunset).....	29·51 { 14·00